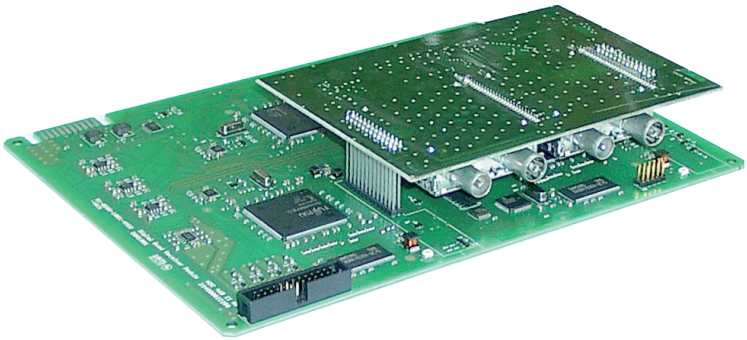
Assembly Instructions

English

AB 3000 Basis Unit
Quad COFDM-AV Receiver, 2 Tuner

KCR 342



Notes on the Assembly Instructions.
As well as this supplementary Assembly Instructions, the Assembly Instructions for the KAB 3000 apply.

CE

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1 Safety regulations

- The standards IEC/EN/DIN EN 50083 resp. IEC/EN/DIN EN 60728 must be observed.
- Do not perform installation and service work during thunderstorms.
- Assembly, installation and servicing should be carried out by authorised electricians.
- Switch off the operating voltage of the system before beginning with assembly or service work.
- Avoid short circuits!
- Observe the relevant standards, regulations and guidelines on the installation and operation of antenna systems.
- To ensure electromagnetic compatibility, make sure all connections are tight and the covers are screwed on securely.
- No liability is accepted for damage caused by faulty connections or inappropriate handling of the device.

Check the basis unit KAB 3000 according to the safety instructions listed in their assembly instruction.

Take precautions to prevent static discharge when working on the device!

Electronic devices should never be disposed of in the household rubbish. In accordance with directive 2002/96/EC of the European Parliament and the European Council from January 27, 2003 which addresses old electronic and electrical devices, such devices must be disposed of at a designated collection facility. At the end of its service life, please take your device to one of these public collection facilities for proper disposal.

2 General information

2.1 Scope of delivery

1 KCR 342 module
1 AV cable
1 CD (assembly instructions)
1 Brief Assembly Instructions

2.2 Meaning of the symbols used

Important note

—> General note

◁▷ – ◁ / ▷
△▽ – △ / ▽ Optional use of the buttons

• Performing works

2.3 Technical data

The requirements of the following are met:
2006/95/EC, 2004/108/EC
The product fulfils the guidelines and standards for CE labelling.

Unless otherwise noted all values are specified as "typical".

HF input:

Frequency range: ..... 177.5 ... 858 MHz
Level: ..... 60 dBµV ... 80 dBµV
Input impedance: ..... 75 Ω
Return loss: ..... 8 dB
Channel input: ..... C 05 ... C 69

Output specifications:

Audio

Frequency range: ..... 20 Hz ... 15 kHz
Level at -12 dB: ..... 500 mV_{rms}
Impedance: ..... 1 kΩ
Noise voltage ratio rated (DIN 45633): ..... 60 dB
Non-linear distortion factor: ..... 0.6 %

Video

Signal-to-noise ratio: ..... ≥ 54 dB (rated)
Level (75 Ω): ..... 1 V_{pp}
Impedance: ..... 75 Ω

Connections:

HF inputs: ..... 2 IEC sockets
Loop through outputs: ..... 2 IEC sockets
Connection strip (20-pin): ..... For supply voltages and control circuits
AV output: ..... 26-pin socket

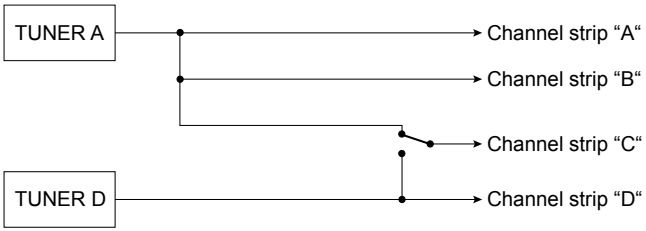
2.4 Description

The COFDM AV module KCR 342, in the following called digital module, has a COFDM AV converter which simultaneously converts four COFDM modulated channels into AV signals using two DVB-T tuners.
The digital module has two DVB-T inputs. Via the AV interface, the decoded video and audio signals are fed to the corresponding modulator module. From there, they are fed to the HF output collector of the basis unit, through which the level of the output signal can be adjusted via the software in the basis unit. The channel strips "**A**" "**B**", "**C**" and "**D**" can be individually programmed. This means it is possible to select up to 4 channels out of two data streams. The following table shows the allocation of the selectable number of channels to the tuners:

	Tuner "A"	**Tuner "D"**
Number of channels	3	1
	2	2

For example, if three channels from tuner "A" will be used, one channel from tuner "D" can be used. If two channels from tuner "A" will be used, two channels from tuner "D" can also be used.

Signal transfer principle:



To operate the digital module the software version of the control unit (basis unit) must be "**V 8**" or higher. The operating software of the digital module and the basis unit can be updated using a PC or notebook and the software "**BE-Flash**" via the 9-pin D-SUB socket on the basis unit. You can find the current operating software for the basis unit and the digital module, the software "**BE-Flash**" and the current assembly instructions on the website "***www.dct-delta.de***".

The digital module is designed exclusively for use in the KAB 3000 basis unit.

3 Installation

- Ensure the basis unit is mounted so it will not be able to vibrate. Avoid, for example, mounting the basis unit onto a lift shaft or any other wall or floor construction that vibrates in a similar way.
- Before installing or changing a module, switch off the basis unit or unplug the power cable from the mains power socket.

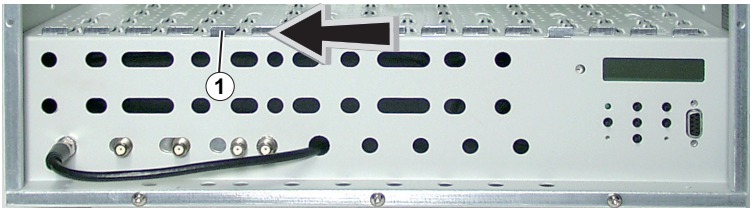
Take measures to protect against ESD!

- Open the housing of the basis unit in accordance with the assembly instructions for the KAB 3000.

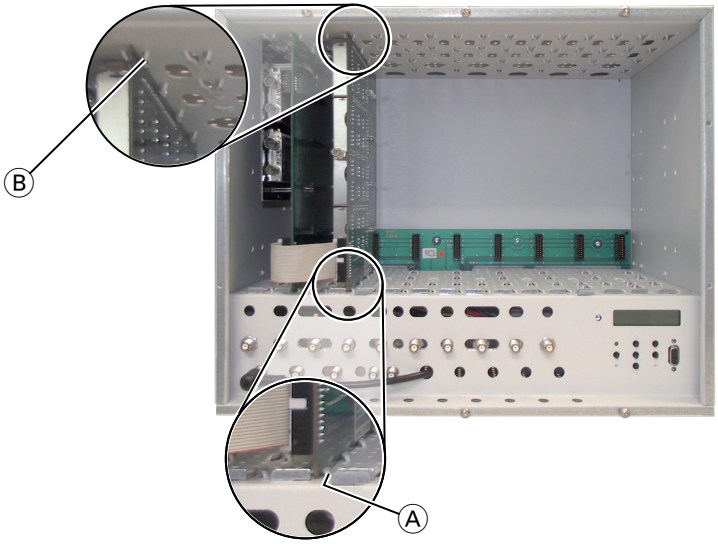
3.1 Installing the digital module

- Always position modules which belong together next to each other. The digital module must be installed to the left of the modulator module.
- Insert the digital module in a long numbered groove in front of a contact strip on the board at the rear wall of the housing.
- The shorter not numbered grooves without a contact strip on the board at the rear wall of the housing are for add-on modules only.

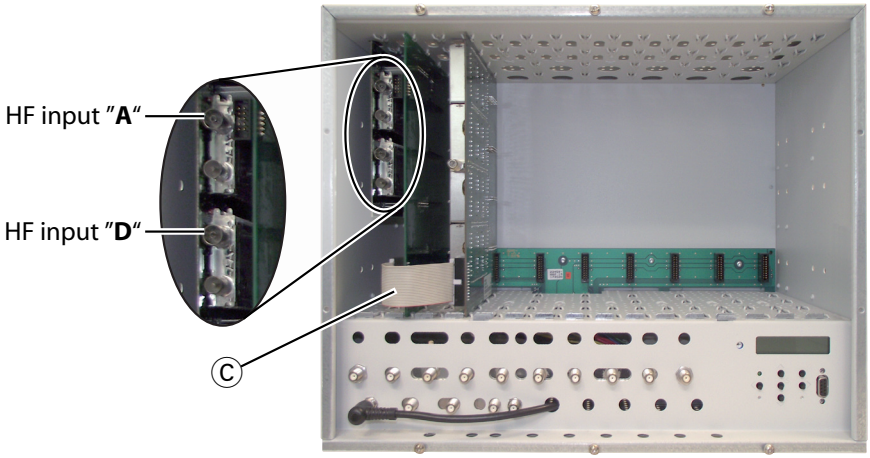
- Open the locking device (1) in the direction of the arrow.



—> Slots 1 (digital module) and 2 (modulator module) are shown in the illustration. The open slots in between (without a contact strip on the board at the rear wall of the housing) are intended for add-on modules.



- Insert the digital module in grooves (A) and (B) of an open slot (with contact strip on the board at the rear wall of the housing) next to the associated modulator module.
- Gently slide the digital module into the basis unit and ensure that it makes contact with the contact strip on the board at the rear wall of the housing.



- Using the AV cable Ⓒ, connect the digital module to the modulator module.
- Connect the HF inputs "**A**" and "**D**" on the digital module with the corresponding cable inlets using cables made on-site.

4 The control panel at a glance

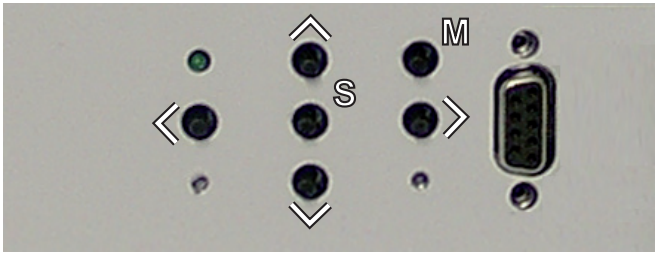
4.1 Menu items

Program the digital module using the buttons on the basis unit control unit. The menus appear on the two-line display of the control unit.
The parameters and functions to be set are underlined.

You can use the M button to select the following menu items:

- Tuner selection (channel strip "C" only)
- Input channel (channel strip "A" and "D" only)
- Hierarchical modulation (channel strip "A" and "D" only)
- Station filter
- Audio stream of the TV channel
- Audio output level
- Stereo identification / audio type selection
- Picture format (WSS) / teletext
- Test lines
- Teletext subtitle page
- Store

4.2 Functions of the control panel buttons



< > – To move the cursor
^ v – To adjust values and functions
S – To store the programmed data
M – To switch to the next menu

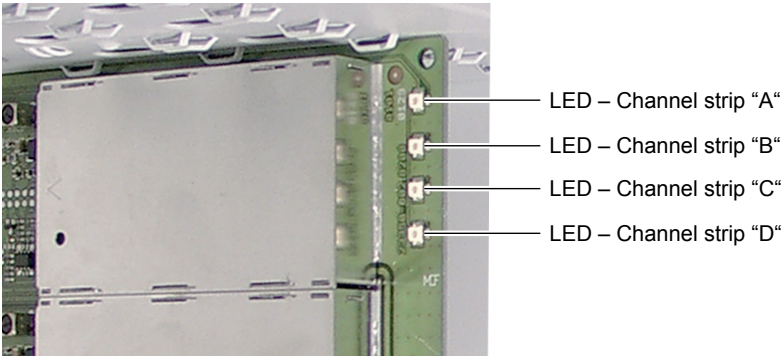
5 Programming

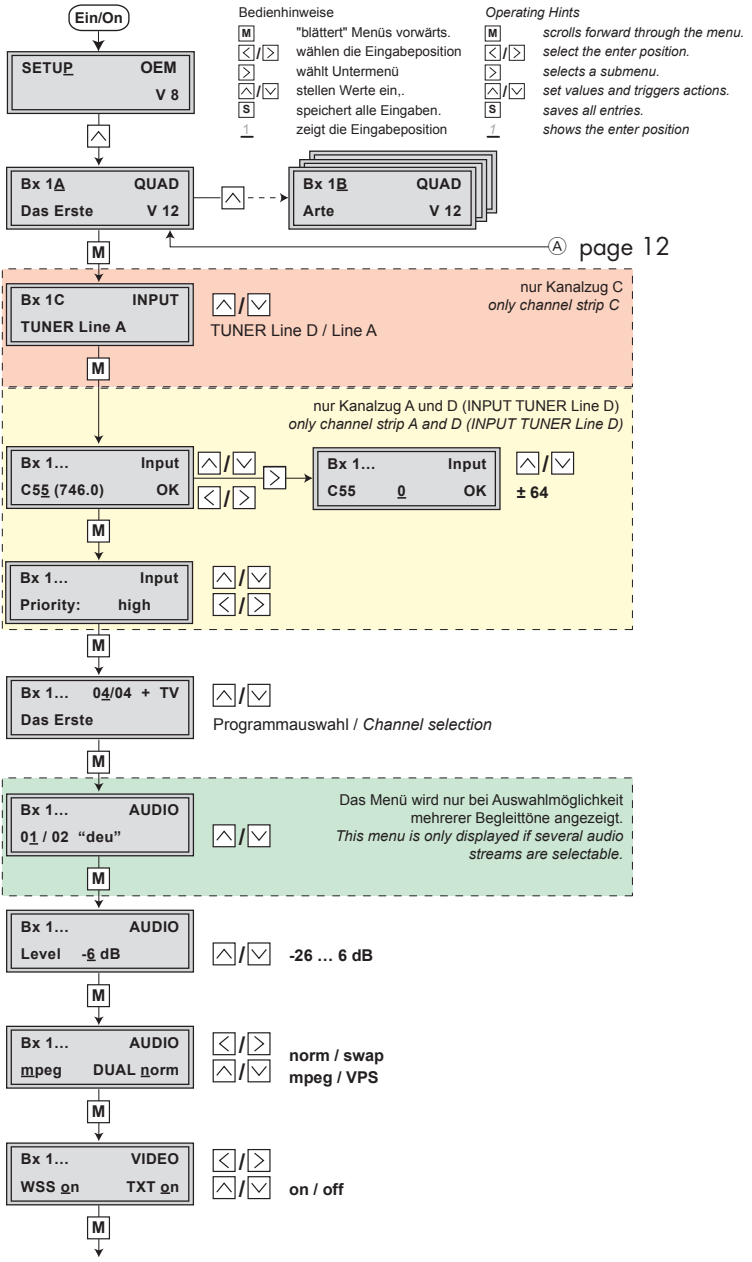
5.1 Preparation

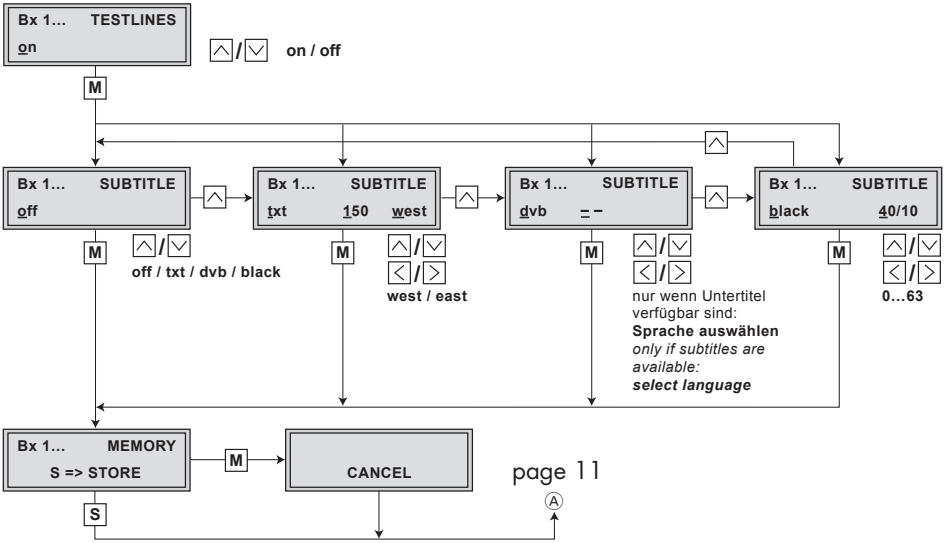
- Connect the digital module to a programmed modulator module.
- Connect the test receiver to the HF output on the modulator module.
- Adjust the test receiver to the output channel of the channel strip to be set:
  Digital module – channel strip "**A**" —> modulator module – channel strip "**A**",
  Digital module – channel strip "**B**" —> modulator module – channel strip "**B**",
  Digital module – channel strip "**C**" —> modulator module – channel strip "**C**",
  Digital module – channel strip "**D**" —> modulator module – channel strip "**D**".

—> Entries in the settings menus can be stored by pressing the S button. You will be returned to the menu item "**Selecting the module / channel strip**".

- Switch on the modulator if necessary. For each modulator, there is a green LED which indicates if the modulator is switched on.




Ein/On
SETUP OEM
V 8
Bedienhinweise
M "blättert" Menüs vorwärts.
</> wählen die Eingabeposition
> wählt Untermenü
^/v stellen Werte ein,.
S speichert alle Eingaben.
1 zeigt die Eingabeposition
Operating Hints
M scrolls forward through the menu.
</> select the enter position.
> selects a submenu.
^/v set values and triggers actions.
S saves all entries.
1 shows the enter position
Bx 1A QUAD
Das Erste V 12
Bx 1B QUAD
Arte V 12
A page 12
M
Bx 1C INPUT
TUNER Line A
^/v
TUNER Line D / Line A
nur Kanalzug C
only channel strip C
nur Kanalzug A und D (INPUT TUNER Line D)
only channel strip A and D (INPUT TUNER Line D)
Bx 1... Input
C55 (746.0) OK
^/v
</>
Bx 1... Input
C55 0 OK
^/v
± 64
Bx 1... Input
Priority: high
^/v
</>
Bx 1... 04/04 + TV
Das Erste
^/v
Programmauswahl / Channel selection
Bx 1... AUDIO
01 / 02 "deu"
^/v
Das Menü wird nur bei Auswahlmöglichkeit mehrerer Begleittöne angezeigt.
This menu is only displayed if several audio streams are selectable.
Bx 1... AUDIO
Level -6 dB
^/v
-26 ... 6 dB
Bx 1... AUDIO
mpeg DUAL norm
</>
^/v
norm / swap
mpeg / VPS
Bx 1... VIDEO
WSS on TXT on
</>
^/v
on / off



5.3 Programming a module

Notes:

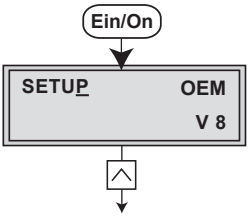
– Entries are saved by pressing the S button.

—> You will be returned to "**Selecting the module/channel strip**".

– The programming process can be cancelled by pressing and holding the M button.

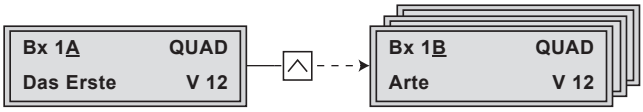
—> You will be returned to "**Selecting the module/channel strip**".

• Switch on the basis unit.



—> The display shows "**SETUP OEM**" and the software version of the basis unit (e.g. V 8).
—> The output level of the output collector can be adjusted in the "**SETUP**" menu (see KAB 3000 assembly instructions).

SELECTING THE MODULE / CHANNEL STRIP



—> The display shows, for example, the "**Bx 1A QUAD**" menu.

"**Bx**"	indicates the slot
"**1**"	indicates slot no. 1
"**A**"	indicates channel strip A
"**Das Erste**"	name of the selected channel
"**V 12**"	software version of the module

- Press ⌃⌄ repeatedly if necessary to select the particular module (**Bx** ...) or channel strip "**A**", "**B**", "**C**" or "**D**" to be programmed.

—> **At first, programme the channel strips "A" and "D", so that transponders are set for the channel strips "B" and "C".**

- Press the M button to activate the channel strip.

Channel strip C:
—> The "Tuner" – "**INPUT**" menu is activated.

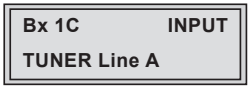
Channel strips A and D:
—> The "Input channel / Fine tuning" – "**INPUT**" menu is activated (page 14).

Channel strip B:
—> Programme channel strip "**A**" prior to channel strip "**B**".
—> The "Station filter" menu is activated (page 17).

Tuner (only channel strip C)

In this menu, select the tuner ("**TUNER Line A**" or "**TUNER Line D**") **for channel strip "C"** of which demodulated data stream you would like to use a station from.

—> **At first, programme the channel strips "A" and "D", so that transponders are set for the channel strip "C".**

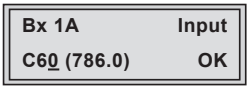


- Using the ⋀⋁ buttons, select "**TUNER Line A**" or "**TUNER Line D**".
- Press the **M** button.

—> The "Station filter" – e.g. "**Bx 1C 02/04 + TV**" menu is activated (page 17).

Input channel / Fine tuning (only channel strips A and D)

In this menu set (only for channel strips A and D) the input channel – and if necessary – via a submenu the fine tuning.

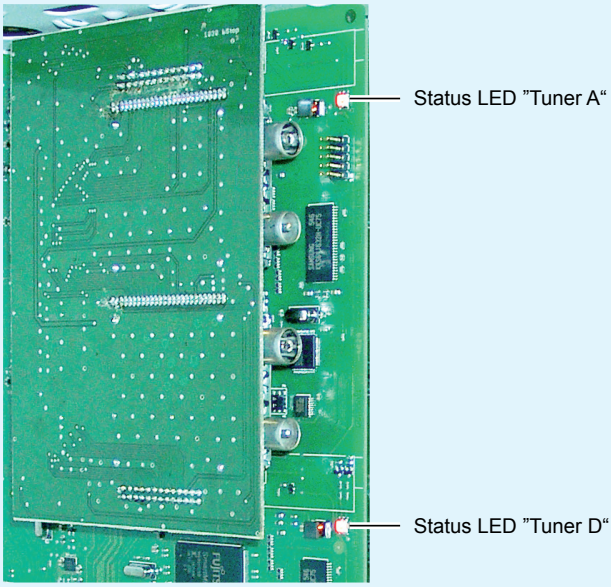


- Set the input channel for the desired transponder by pressing the ⋀⋁ buttons repeatedly or permanently.

—> Beside the input channel set the corresponding frequency is displayed.
—> If "**– –**" appears in the second line of the display, there is no input signal present. Check the configuration of the antenna system and head-end station.
—> If the received signal is all right, "**OK**" is displayed.

—> The quality of the data stream received is indicated by two status LEDs:

LED indicator	Signal
Green	**OK**
Red	**No signal**



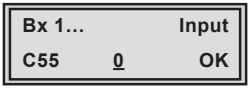
Fine tuning (only channel strip A and D)

If necessary set the fine tuning (±64 steps) via this submenu.

—> Herein you can tune to transmitters which do not match to the channel grid.

—> If fine tuning is not necessary press the M button to select the next menu. The menu "Hierarchical modulation" – "**Input – Priority**" is activated.

- Taste > drücken.



—> Instead of the frequency the current value of the fine tuning is displayed.

- Use the ⋀⋁ buttons to change the value step by step until the desired transmitter "locks" (indication "OK").

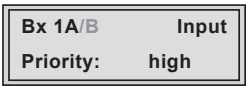
- Press the M button.

—> The "Hierarchical modulation" – "**Input – Priority**" menu is activated.

HIERARCHICAL MODULATION (ONLY CHANNEL STRIP A AND D)

In order to enable reception in areas of bad receiving conditions, a so-called "hierarchical modulation" can be used by broadcasters. The transmitted channel contains 2 data streams (high and low priority). In this case one of the data streams must be selected in the receiver.

—> This setting is not relevant in case of standard modulation.



- By pressing ⋀⋁, set to "**high**" or "**low**".

- Press the M button.

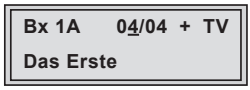
—> The "Station filter" – e.g. "**Bx 1A 04/04 + TV**" menu is activated.

STATION FILTER

In this menu, select the channel from the data stream that is to be made available through this channel strip.
If the message "**no transponder**" appears, no input signal is present. In this case, you should check the previous settings as well as the configuration of the receiving system.

—> At first, programme the channel strips "A" and "D", so that transponders are set for the channel strips "B" and "C".

If the "**scanning ...**" message appears on the display, the table of received channels is being read. Please wait until this process is finished.



Meaning of the indicators shown in this example:

"**04/04**"	The 4th of a total of 4 TV channels is being shown or has been activated.
"**+**"	The audio stream for the current TV channel is available in several languages.
"**TV**"	The data on the display corresponds to a TV channel.
"**Das Erste**"	Station name

Other possible indicators:

"**RA**"	The data on the display corresponds to a radio station.
" * "	A star indicates that this TV or radio station is scrambled.

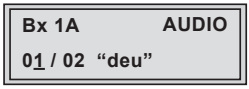
—> For radio stations, the background of the screen of the connected TV or test receiver is darkened.
—> If a service number (e.g. "**SERVICE 131**") appears instead of "**TV**" or "**RA**", this indicates that an unnamed station or an undefined data stream is being received.

- Select the desired TV or radio station with the ⋀⋁ buttons.
- Press the **M** button.

—> If the selected channel is broadcast with two or more audio streams, the "Audio stream for a TV channel" – "**AUDIO**" menu will appear. Otherwise the "Volume level" – "**AUDIO Level**" menu is activated (see page 18).

AUDIO STREAM FOR A TV CHANNEL

This menu only appears if the selected channel is broadcast with two or more audio streams (languages). In this menu, select the desired audio stream from the transport stream.



- Use the [∧][∨] buttons to select the audio stream you want.

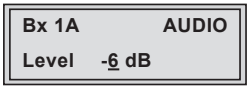
—> In the example the audio stream "01" of two available audio streams is selected.

- Press the [M] button.

—> The "Volume level" – "**AUDIO Level**" menu is activated.

VOLUME LEVEL

In this menu, you can balance unequal volume levels of TV and radio stations in the various channel strips.



- Use the [∧][∨] buttons to adjust the volume of the individual channel strips so that they are all balanced.

- Press the [M] button.

—> The "Identification of the stereo / dual tone" – "**AUDIO**" menu is activated.

Identification of the stereo / Dual tone

In this menu, you can select whether the stereo audio identification is decoded from the VPS data or from the MPEG data stream. Further you can switch between the languages on TV stations with dual tone.

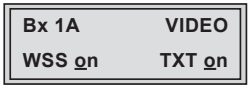
- Using the [△][▽] buttons, select which data stream should be decoded "**mpeg**" or "**VPS**."
- Use the [◁][▷] buttons to position the cursor under the dual tone code to be set. Use the buttons [△][▽] to switch between ("**DUAL norm**" or "**DUAL swap**") audio streams (languages) for dual tone TV channels.

- Press the [M] button.

—> The "Picture format / Teletext mode" – "**VIDEO WSS**" menu is activated.

Picture format / Teletext mode

If problems with the automatic picture format switchover (e.g. 4:3, 16:9, Letterbox) arise with the connected devices, you can switch "**off**" the Wide-Screen-Signaling (WSS) in this menu.
In addition you can activate or deactivate the teletext mode.



- To activate/deactivate WSS, use the [△][▽] buttons to select "**on**" or "**off**".
- To activate/deactivate teletext mode, use the [◁][▷] buttons to position the cursor under teletext mode "**TXT on**" and use the [△][▽] buttons to select "**off**" or "**on**".

- Press the [M] button.

—> The "Activating test lines" – "**TESTLINES**" menu is activated.

ACTIVATING TEST LINES

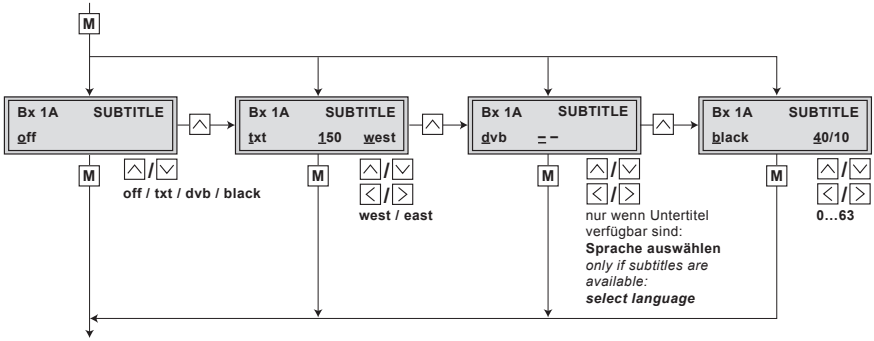
For specific applications test lines can be inserted in the teletext in this menu.

- Using the ⋀⋁ buttons switch the test lines "**on**" and "**off**"
- Press the M button.

—> The "Teletext subtitle pages and standard, Black bar" – "**SUBTITLE**" menu is activated.

TELETEXT SUBTITLE PAGES AND STANDARD, BLACK BAR

This menu allows subtitles (transmitted in teletext or DVB data stream) to be displayed directly in the channel or parts of the screen to be masked by a black bar. Using the ⋀⋁ buttons, the submenus can be selected. With setting "**SUBTITLE - off**" subtitle function is switched off.



If you do not want to change the setting, press the M button.

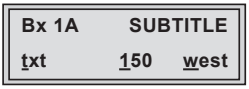
—> The "Storing data" – "**MEMORY**" menu is activated (see page 22).

Teletext subtitles are switched off the illustrated example.

Activating teletext subtitle pages and standard

This menu allows subtitles transmitted in teletext to be displayed directly in the channel.
To display the characters for Western ("**west**") or Eastern ("**east**") European languages, the corresponding character set can be selected.

- Using the ⋀⋁ buttons select the submenu "**SUBTITLE - txt**".



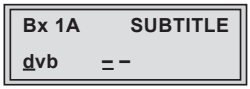
- Using the ⋖⋗ buttons select the digit of the page number to be set. Then use ⋀⋁ to set each of the three digits.
- Using the ⋖⋗ buttons select the teletext standard setting, e.g. "**west**" and use ⋀⋁ to select the teletext standard "**west**" or "**east**".
- Press the **M** button to activate these settings and to leave the "Setting the subtitle functions" menu.

—> The "Storing data" – "**MEMORY**" menu is activated (see page 22).

Activating DVB subtitle pages

This menu allows subtitles transmitted in a DVB data stream to be displayed directly in the channel. The language of the subtitles can be selected.

- Using the ⋀⋁ buttons select the submenu "**SUBTITLE - dvb**".



- Using the ⋖⋗ buttons select "**– –**" and select the language you want using the ⋀⋁ buttons.

—> This selection is only possible if subtitles are available.

- Press the **M** button to activate these settings and to leave the "Setting the subtitle functions" menu.

—> The "Storing data" – "**MEMORY**" menu is activated (see page 22).

BLACK BAR

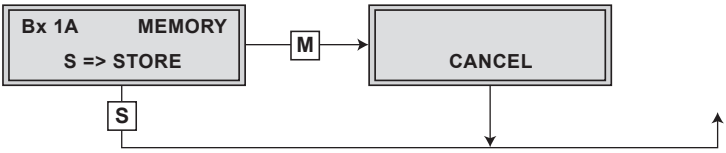
This menu allows to mask a part of the screen (e.g. "ticker") by a black bar. The vertical position and the height can be adjusted.

- Using the △▽ buttons select the submenu "**SUBTITLE - black**".

- Using the ◁▷ buttons select the setting of "**vertical position / height of the bar**" and set the value you want using the △▽ buttons.
- Press the M button to activate these settings and to leave the "Setting the subtitle functions" menu.

—> The "Storing data" – "**MEMORY**" menu is activated (see page 22).

STORING DATA



- All programmed data is saved by pressing the S button. Then you will be returned to the menu item "**Selecting the module / channel strip**" (page 13).

—> By pressing the M button, you will be returned to the menu item "**Selecting the module / channel strip**" (page 13) **without** saving the programmed data.
—> Select additional channel strips for programming if necessary.

After installing the basis unit, upgrading accessories or installing modules it is necessary to tighten all cable connections, cable terminals and cover screws in order to maintain compliance with current EMC regulations.

- Securely tighten the cable connections (F connectors) using an open-ended spanner (spanner gap 11 mm).
- Mount the base plate and the front cover (see KAB 3000 assembly instructions).

Alterations reserved. Technical data E. & O.E.

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